

Office Action Summary

Application No.

09/826,118

Applicant(s)

VON DER EMBSE, URBAIN
ALFRED

Examiner

Chat C. Do

Art Unit

2193

– The MAILING DATE of this communication appears on the cover sheet with the correspondence address –

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.138(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 5/24/04; 6/30/05; 12/13/05; 2/21/06.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 21 February 2006 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>5/24/04</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This communication is responsive to Amendment filed 02/21/2006.
2. Claims 1-6 are pending in this application. Claims 1 and 5 are independent claims. In Amendment, claims 1-6 are completely amended. This Office Action is made non-final after a RCE filed 12/13/2005.

Information Disclosure Statement

3. The information disclosure statement filed 05/24/2004 fails to comply with the provisions of 37 CFR 1.97, 1.98 and MPEP § 609 because the list does not cite in PTO-1449 form. It has been placed in the application file, but the information referred to therein has not been considered as to the merits. Applicant is advised that the date of any re-submission of any item of information contained in this information disclosure statement or the submission of any missing element(s) will be the date of submission for purposes of determining compliance with the requirements based on the time of filing the statement, including all certification requirements for statements under 37 CFR 1.97(e). See MPEP § 609.05(a).

Drawings

4. Figures 1-2 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated which is disclosed in the background of art in page 7 second and third paragraph of specification. See MPEP § 608.02(g). Corrected drawings in compliance with 37

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CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

5. The drawings are objected to because a replacement sheet is needed for every change(s) in the drawing instead of cross-out Figure(s). Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

6. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the features or limitations cited in

claims 1 and 5 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

7. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

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The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

8. The abstract of the disclosure is objected to because the abstract exceeds 150 words in length. Correction is required. See MPEP § 608.01(b).

Claim Objections

9. Claim 1 is objected to because of the following informalities:

Re claim 1, the applicant is advised to replace the word "fpr" in claim 1 as "for" for correction. In addition, the step "means for generating complex wavelet waveform and filters" does not contribute or relate to the claim structure.

Appropriate correction is required.

10. Claims 3-4 are objected to under 37 CFR 1.75(c) as being in improper form because a multiple dependent claims 1-2 and 1-3 respectively. See MPEP § 608.01(n). Accordingly, the claims 3-4 have not been further treated on the merits.

Claim Rejections - 35 USC § 112

11. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

12. Claims 1-6 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Re claim 1, the limitations "the scale and translation parameters" in lines 6-7, "the Fourier harmonics" in line 10, and "the design coordinates" in lines 10-11 lack antecedence basis because they are not explain or disclose previously in the claim. For examination purposes, the examiner considers the limitations as any arbitrary scale and translation parameters, Fourier harmonics, and design coordinates. Similarly, claims 2-4 have the same rejection.

13. Regarding claims 1-2 and 4, the word "means" is preceded by the word(s) "for including" in an attempt to use a "means" clause to recite a claim element as a means for performing a specified function. However, since no function is specified by the word(s) preceding "means," it is impossible to determine the equivalents of the element, as required by 35 U.S.C. 112, sixth paragraph. See *Ex parte Klumb*, 159 USPQ 694 (Bd. App. 1967).

14. Claims 1-6 are rejected as failing to define the invention in the manner required by 35 U.S.C. 112, second paragraph.

The claim(s) are narrative in form and replete with indefinite and functional or operational language. The structure which goes to make up the device must be clearly and positively specified. The structure must be organized and correlated in such a manner as to present a complete operative device. The claim(s) must be in one sentence form only. Note the format of the claims in the patent(s) cited.

Claim Rejections - 35 USC § 101

15. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

16. Claims 1-5 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

Claims 1-5 clearly recite a method for designing multi-resolution waveforms and filters according to a mathematical algorithm. In order for such a claimed method to be statutory, the claims must include either a step or means that results in physical practical application at useful end or a useful, discrete, and tangible result. However, it is clear from the claims that the claims merely recite step or non-specific means for data computation and manipulation in performing a mathematical function. The input is a number and output is also a number. The claims fail to cite the result(s) in physical practical application at useful end or a useful, discrete, and tangible result. Therefore, claims 1-5 are clearly directed to a non-statutory subject matter.

Claim Rejections - 35 USC § 102

17. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

18. Claims 1 and 5 are rejected under 35 U.S.C. 102(b) as being anticipated by the admitted prior art.

Re claim 1, the admitted prior art discloses in pages 2-8 a method for designing multi-resolution waveforms and filters (e.g. lines 15-35 in page 5), method comprising: means for generating complex wavelet waveforms and filters (e.g. Figure 1 and lines 6-

16 page 7), means for including a frequency translation property specified by a frequency translation parameter in addition to the scale and translation parameters, means for using a subset of the Fourier harmonics as the design coordinates (harmonics) specifying the waveform design (e.g. line 18 page 8 to line 10 page 9), means for providing a single waveform design for all waveform at multiple scale, translation, and frequencies, and means for using the design harmonics and frequency translation property to generate wavelet waveforms at multiple scales and multiples frequencies (e.g. line 15 page 2 to line 4 page 4).

Re claim 5, the admitted prior art discloses in pages 2-8 method for the design of multi-resolution waveforms and filters (e.g. lines 15-35 in page 5), method comprising: means for generating complex waveforms with frequency translation, scaling, and time translation properties (e.g. Figure 1 and lines 6-16 page 7), means for providing a single waveform design for all waveforms at multiple scales, translations, and frequencies, means for using a subset of Fourier harmonics as the design coordinates specifying harmonics and the frequency translation property to generate waveforms at multiple scales and multiple frequencies (e.g. line 18 page 8 to line 10 page 9), and means for using the plurality of optimum design techniques to derive the design harmonics (e.g. line 15 page 2 to line 4 page 4).

Response to Amendment

19. The amendment filed 02/21/2006 is objected to under 35 U.S.C. 132(a) because it introduces new matter into the disclosure. 35 U.S.C. 132(a) states that no amendment shall

introduce new matter into the disclosure of the invention. The added material which is not supported by the original disclosure is as follows:

1. Most of limitations cited in claims 1-5 are new matter into the original disclosure.
2. the following limitations "this invention...radar waveform" in lines 13-35 page 9, Figures 5, and Matlab code pages 37-44. Even though, the algorithm is briefly disclosed in the original specification, however, the detail structure of Matlab code and algorithm are not disclosed or written in the original specification.

Applicant is required to cancel the new matter or clearly point how the original disclosure support the new matter above in the reply to this Office Action.

Response to Arguments

20. Applicant's arguments with respect to claims 1-6 have been considered but are moot in view of the new ground(s) of rejection.

21. An examination of this application reveals that applicant is unfamiliar with patent prosecution procedure. While an inventor may prosecute the application, lack of skill in this field usually acts as a liability in affording the maximum protection for the invention disclosed. Applicant is advised to secure the services of a registered patent attorney or agent to prosecute the application, since the value of a patent is largely dependent upon skilled preparation and prosecution. The Office cannot aid in selecting an attorney or agent.

A listing of registered patent attorneys and agents is available on the USPTO Internet web site <http://www.uspto.gov> in the Site Index under "Attorney and Agent Roster." Applicants

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may also obtain a list of registered patent attorneys and agents located in their area by writing to the Mail Stop OED, Director of the U. S. Patent and Trademark Office, PO Box 1450, Alexandria, VA 22313-1450.

Conclusion


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chat C. Do whose telephone number is (571) 272-3721. The examiner can normally be reached on M => F from 7:00 AM to 5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chaki Kakali can be reached on (571) 272-3719. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

April 3, 2006

Chat C. Do
Examiner
Art Unit 2193


KAKALI CHAKI
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100



APPLICATION NO. 09/826,118

INVENTION: ~~New Wavelet Multi-Resolution Waveforms~~

INVENTORS: Urbain Alfred von der Embse

RECEIVED

MAY 28 2004

Technology Center 2100

CROSS-REFERENCE TO RELATED APPLICATIONS

U.S. PATENT DOCUMENTS

US-5,453,945	Sept 26 1995	Tucker et al.
US-5,526,446	June 11 1996	Adelson et al.
US-5,845,243	Dec 1 1998	Smart et al.
US-5,937,009	Aug 10 1999	Wong et al.
US-5,953,388	Sept 14 1999	Walnut et al.
US-6,064,768	May 16 2000	Hajj et al.
US-6,091,777	Jul 18 2000	Guetz et al.
US-6,182,035	Jan 30 2001	Mekuria
US-6,477,553	Nov 5 2002	Druck
US-6,584,111	June 24 2003	Aweya et al.
US-6,643,406	Nov 4 2003	Hajjahmad et al.
US-6,687,422	Feb 3 2004	Chen et al.

not considered

OTHER PUBLICATIONS

"A Computer Program for Designing Optimum FIR Linear Phase Filters" J.H. Mc.Clellan, T.W. Parks and L.R. Rabiner, IEEE Trans Audio Electroacoust. Vol. AU-21, Dec. 1973, pp. 506-526

"Eigenvalues: A New Approach to Least-Squares FIR Filter Design and Applications Including Nyquist Filters", P.P. Vaidyanathan and T.Q. Nguyen, IEEE Trans. on Circuits and Systems, Vo. CAS-34, No. 1, Jan. 1987, pp 11-23

"Wavelet Transform based Fast Approximate Fourier Transform", Haitao Guo, Sidney Burrus, 1997, IEEE, pp. 1973-1976

"A new design algorithm for two-band orthonormal rational filter banks and orthonormal rational Wavelets", T. Blu, IEEE Signal Processing, June 1998, pp. 1494-1504

"Optimum discrete Wavelet scaling and its application to delay and Doppler estimation", K.C. Ho and Y. T. Chan, IEEE Signal Processing, Sept. 1998, pp. 2285-2290

"Progressive Wavelet Correlation Using Fourier Analysis", Harold S. Stone, 01/1999 IEEE Transactions on Signal Processing Vol 47, No 1, pp 97-107 IEEE

"2-D and 1-D Multipaired Transforms: Frequency-Time Type Wavelets", Artyom M. Grigoryan, 02/2001 IEEE Transactions on Signal Processing, Vol. 49, No. 2, pages 344-353



UNITED STATES PATENT AND TRADEMARK OFFICE

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/826,118	01/09/2001	Urbain Alfred Von der Embse		4398
7590 04/10/2006				
URBAIN A. VON DER EMBER 7323 W. 85TH STREET WESTCHESTER, CA 90045-2444				
		EXAMINER DO, CHAT C		
		ART UNIT PAPER NUMBER		
		2193		

DATE MAILED: 04/10/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

APPLICATION NO. 09/826,118

TITLE OF INVENTION: Wavelet Multi-Resolution Waveforms

INVENTOR: Urbain A. von der Embse



Currently amended DRAWINGS AND PERFORMANCE DATA